ABSTRACT OF THE DISCLOSURE

A Viterbi bit detection method for detecting the bit values of bits of a channel data stream stored on a record carrier along an N-dimensional channel tube, N being at least two, of at least two bit rows one-dimensionally evolving along a first direction and being aligned with each other along at least a second of N-1 other directions, the first direction together with the N-1 other directions constituting an N-dimensional lattice of bit positions, includes application of a row-based one-dimensional Viterbi bit detection method independent for each of the bit rows of said channel tube. To achieve a reliable bit detection, a number of independent one-dimensional row-based Viterbi bit detectors, also known as sequence detectors, is used, one for each bit row in the channel tube: the interference between successive neighboring bit rows is taken into account via the computation of the branch metrics (for the considered bit row), in which local bit decisions on the primary neighboring bits in the neighboring rows are used. As local bit detectors going beyond the performance of a threshold detector, the use of a HD-2 or HD-3-like hard-decision bit detector is proposed.